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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,680

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EXAMINER

THORNEWELL, KIMBERLY A

ART UNIT

PAPER NUMBER

2128

MAIL DATE

DELIVERY MODE

04/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action
Before the Filing of an Appeal Brief**

Application No. 10/533,680	Applicant(s) PLACKO ET AL.	
Examiner Kimberly Thornewell	Art Unit 2128	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 05 March 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) ~~set forth~~ in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because:
- (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ They raise the issue of new matter (see NOTE below);
- (c) ☒ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.
- NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL -324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
- The status of the claim(s) is (or will be) as follows:
- Claim(s) allowed: _____.
- Claim(s) objected to: _____.
- Claim(s) rejected: 1-29.
- Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:
See Continuation Sheet.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

Continuation of 11. does NOT place the application in condition for allowance because:

The Examiner thanks Applicants for amending claim 1 to remove the "computer means language," and claims 20 and 21 to remove the multidependent claim language. Accordingly, the rejection of claims 1, 20 and 21 under 35 USC 112, second paragraph is withdrawn.

Applicants have amended independent claims 1 and 29 to recite either a method performed by a processor in connection with a memory or a computer program product stored in a central unit memory and run on a processor comprising an interaction matrix stored in a first memory of the central unit, a first column matrix stored in a secondary memory of the central unit, and a second column matrix stored in a third part of memory of the central unit. The Examiner respectfully submits that Applicants' amendment does not direct claims 1-29 to patentable subject matter under 35 USC 101. Regarding claims 1 and 29, the methods of both claims result in evaluating coefficients of the second column matrix. However, the claim lacks a real-world result because the coefficients of the second column matrix evaluated as a result of the claims have not been given a practical application. See MPEP 2106 ("the process claim must set forth a practical application...to produce a real world result"), and Final Office Action, page 5 section 12.


Regarding the claim rejections under 35 USC 103, as an initial matter, Applicants appear to imply that a metallic plane in front of the sensor is not an obstacle (see Remarks page 13 second full paragraph). However, Applicants have not actually put forth an argument. Clarification is respectfully requested.

Applicants argued that neither Placko nor Tsingos disclose meshing a surface of an obstacle into a plurality of surface samples, where the obstacle receives a main wave and emits a secondary wave (Remarks page 13 first full paragraph). The Examiner respectfully points to Placko, page 54, Figures 2 and 3. Figure 2 shows the geometry of a magnetic sensor, where a wave is propagated from the north pole to an obstacle, i.e., the south pole. Figure 3 shows that the surfaces both poles are discretized, i.e., meshed into a plurality of surface samples dS . When the main wave (i.e., the wave emitted from the north pole) reaches the south pole, that wave is inherently reflected and/or refracted, thus creating the secondary wave.

Regarding Applicants' arguments that Tsingos does not teach meshing an obstacle into a plurality of surface samples (Remarks page 14 first paragraph), the Examiner respectfully submits that the Tsingos reference was not relied on for this limitation because, as described above, this feature is taught by the Placko reference. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Furthermore, Applicants argued that Tsingos does not teach a predetermined points associated with a surface sample corresponding to a point of contact between the surface sample and a hemisphere. As noted in the Final Office Action, this feature is taught by Placko on page 55 at figure 4. Moreover, on page 55, first paragraph under section 3.2, Placko teaches "computing the magnetic potential θ_k at each peak point (Pk) of the hemispherical surface (radius r), due to all sources S_i ." Each coefficient in the second column matrix corresponds to a value θ (Placko page 56 equation 9).

Applicants are reminded that the use of the hemispheres is merely a pictorial representation of the concept of Huygens wavelets (over a century old). The Examiner respectfully points to the enclosed screenshot of an interactive Java tutorial from Molecular Expressions on reflection and refraction with Huygens wavelets (found at <http://micro.magnet.fsu.edu/primer/java/reflection/huygens/index.html>). The tutorial teaches that Huygens' principle was proposed near the beginning of the eighteenth century, and that each point in a wave of light can be thought of as an individual source of illumination that produces its own spherical wavelets. In the theory, the direction of the wavelet depends upon whether the wave is reflecting or refracting. The tutorial illustrates a main comprising hemispherical wavelets propagating through a first medium in to a second medium (obstacle), and the second medium emitting a (reflected and/or refracted) secondary wave in response. Applicants are respectfully requested to provide an explanation as to how the present invention differs from the teachings of the last century as expressed in the Java tutorial.


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